

**APPENDIX A**

**STATEMENT OF WORK**

**FOR**

**THE REMEDIAL DESIGN/REMEDIAL ACTION  
CONSENT DECREE**

**AT THE  
WATERLOO COAL GASIFICATION PLANT SITE  
WATERLOO, BLACK HAWK COUNTY, IOWA**

**SEPTEMBER 2006**

**STATEMENT OF WORK FOR  
THE REMEDIAL DESIGN AND REMEDIAL ACTION  
AT THE WATERLOO COAL GASIFICATION PLANT SITE  
WATERLOO, BLACK HAWK COUNTY, IOWA**

**I. INTRODUCTION AND PURPOSE**

This Statement of Work (SOW) sets forth the requirements for implementation of the remedy set forth in the Record of Decision (ROD), signed by the Superfund Division Director for the U.S. Environmental Protection Agency (EPA) Region VII on September 24, 2004, for the Waterloo Coal Gasification Plant Site (Site) and the subsequent Explanation of Significant Differences (ESD) for the Site. This SOW is incorporated into and made a part of the Consent Decree (CD) entered into by the Settling Defendant and the United States of America for the Remedial Design and Remedial Action to be conducted at the Site. The Settling Defendant, MidAmerican Energy Company (MidAmerican), shall follow the ROD, the ESD, the CD, the approved Remedial Design/Remedial Action Work Plan, and pertinent reference documents listed in Section VI of the SOW and subsequent revisions thereto, upon notification by the EPA to Settling Defendant of such revision, in submitting deliverables for and implementing the remedy for the Site.

**II. DESCRIPTION OF REMEDY**

The major components of the remedy set forth in the ROD and ESD to address the Waterloo Coal Gasification Plant Site are:

- Implementation of institutional controls to: 1) prohibit the installation of water wells; 2) restrict the use of property from residential development, and 3) include provisions to test for and address, if necessary, the vapor intrusion pathway into future buildings constructed on the portions of the Site identified as Areas I, II, and III to ensure safe uses.
- Groundwater monitoring for chemicals of potential concern (COPCs) and natural attenuation parameters.

**III. DESCRIPTION OF PERFORMANCE STANDARDS**

**A. Background**

EPA expects to return usable groundwaters to their beneficial uses wherever practicable, within a timeframe that is reasonable given the particular circumstances of the site. When restoration of groundwater to beneficial uses is not practicable, EPA expects to prevent

further migration of the plume, prevent exposure to the contaminated groundwater, and evaluate further risk reduction. When contaminated groundwater is currently or potentially used as a drinking water source, the EPA typically selects a remedy that will restore the groundwater to Maximum Contaminant Levels (MCLs) or non-zero MCL Goals established under the Safe Drinking Water Act. However, when there are site specific conditions that may inhibit groundwater restoration, the EPA has established guidance and a mechanism to evaluate the technical impracticability of restoring groundwater to meet applicable or relevant and appropriate requirements (ARARs).

In accordance with EPA guidance, Settling Defendant prepared a Technical Impracticability (TI) Evaluation Report for the Site. The August 2006 TI Evaluation Report provides the basis for EPA's determination that portions of the aquifer at the Site cannot be restored to MCLs or non-zero MCL Goals within a reasonable time frame due to hydrogeologic and contaminant-related factors, and therefore, the TI ARAR waiver is appropriate for the groundwater COPCs at the Site listed in Table 1-2 of the TI Evaluation Report (Table 1-2 has been included as Attachment 1 to this SOW). The site-related chemical specific ARARs that have been waived by EPA as part of the TI evaluation process are listed in Table 5-1 of the Feasibility Study (FS) Report, including the National Primary Drinking Water Standards of the Safe Drinking Water Act and specifically the MCLs listed in Attachment 1 of this SOW. It is also technically impracticable to achieve the TBC concentrations for the compounds listed in Attachment 1 that do not have chemical-specific ARARs.

EPA refers to the portion of the aquifer where groundwater cannot be restored to drinking water standards within a reasonable timeframe as the "TI Zone", which is the spatial extent over which the TI waiver would apply. The horizontal extent of the TI Zone is depicted in Figure 9-1 of the TI Evaluation Report (Figure 9-1 has been included as Attachment 2 to this SOW). The vertical extent of the TI Zone extends to the base of the alluvial aquifer but not the underlying bedrock aquifer. The TI Waiver applies only to groundwater within the TI Zone.

#### B. Statement of RAOs, Performance Goals, and Performance Standards

The Settling Defendant shall design and implement the Remedial Action to meet the remedial action objectives (RAOs), performance goals, Performance Standards, and conditions set forth in the ROD, the ESD, and this SOW.

The RAOs for the Site, as set forth in the ROD, are as follows: 1) control use of groundwater with contaminant levels exceeding MCLs as a drinking water source and 2) prevent future residential exposure to contaminated Site soil.

The remedy selected in the ROD, as modified in the ESD, provides for an institutional control component. The performance goal of the institutional control component is to reliably control future exposure to contaminated groundwater and soil. Existing institutional controls include the following:

- The existing Waterloo City Ordinance 8-2-1, entitled Mandatory Connection Required, provides that properties abutting city water supply mains may be ordered to be connected to the municipal water system. The city could order a site user to connect to the municipal water system instead of allowing the installation of domestic wells.
- The existing Black Hawk County Regulation 1-99, concerning water wells, requires permits for the installation of water wells within the county. The Black Hawk County Health Department has authority to prevent installation of a water well at the Site.
- An existing Quit Claim Deed executed by MidAmerican states that the Deed restricts the usage of Areas I, II, and III of the Site to commercial or industrial uses unless 1) a study conducted by a qualified engineering or environmental consulting firm with risk assessment capabilities certifies to the Iowa DNR that there is no public health threat presented by conditions associated with residential, recreational, or other specified usage of real estate; or 2) response actions are undertaken by the owner, and the Director of the Iowa DNR approves the residential or other usage of the real estate under remediated conditions.

In addition to the existing institutional controls, Settling Defendant shall execute and record against the portions of the Site identified as Areas I, II, and III an Environmental Covenant. The Environmental Covenant shall prohibit the installation of water wells, restrict the use of the property from residential development, and include provisions to test for and address, if necessary, the vapor intrusion pathway into future buildings constructed on the portions of the Site identified as Areas I, II, and III. The property owner shall also be required to notify Iowa DNR and EPA in the event of a change in land use or transfer of property.

The performance goal for groundwater remediation at the Site is containment of groundwater through natural attenuation processes so that groundwater outside the TI Zone shall not exceed Performance Standards for the site-related groundwater contaminants.

The Performance Standards for groundwater are set forth in Attachment 1 of this SOW. Groundwater shall be monitored by Settling Defendant for natural attenuation parameters and COPCs to measure whether chemical-specific ARAR concentrations for site-related groundwater contaminants migrate beyond the boundaries of the TI Zone. For compounds for which there are no chemical-specific ARAR concentrations (e.g., MCLs), to-be-considered (TBC) values were derived using a residential exposure scenario (i.e., resident exposed to groundwater for 350 days per year for 30 years via dermal, oral, and inhalation exposure pathways). As indicated in Attachment 1 of this ESD, the TBC values are risk-based concentrations based on a  $10^{-6}$  lifetime excess cancer risk (i.e., one in one million chance of developing cancer as a result of site-related exposure) or below a hazard index of one for non-

carcinogens, as appropriate. Another consideration in establishing Performance Standards for certain chemicals was the detection limits and/or reporting limits associated with currently available analytical laboratory procedures. Where the chemical-specific ARAR or TBC value is below the laboratory Practical Quantitation Limit (PQL) for a groundwater COPC, the PQL was used as the preliminary remediation goal. The estimated excess lifetime cancer risks associated with the PQL values for these COPCs are also included in Attachment 1 and all are within the  $10^{-4}$  to  $10^{-6}$  lifetime excess cancer risk range (i.e., one in ten thousand to one in one million chance of developing cancer as a result of site-related exposure). Chemical-specific ARAR concentrations values, TBC concentration values, and PQL values for the COPCs are shown in Attachment 1. For compounds for which there are no chemical-specific ARAR concentrations (e.g., MCLs), to-be-considered (TBC) values have been used to establish Performance Standards.

#### **IV. SCOPE OF REMEDY AND IMPLEMENTATION**

The Remedial Design and Remedial Action shall consist of the following six major tasks. All plans are subject to EPA approval.

##### **A. Summary of Tasks**

Task 1: Institutional Controls

Task 2: Remedial Design/Remedial Action (RD/RA) Work Plan:

1. Overall Management Strategy
2. Groundwater Monitoring Plan
3. Quality Assurance Project Plan
4. Health and Safety Plan
5. Overall Project Schedule

Task 3: Remedial Action

1. Construction Activities
2. Groundwater Monitoring Activities

Task 4: Final Remedial Action Report

Task 5: Operation and Maintenance (O&M) Plan

Task 6: Completion of the Work

Task 7: Progress Reports

B. Description of Each Task

**Task 1: Institutional Controls**

Within 45 days of entry of the CD, the Settling Defendant shall prepare for EPA review and approval an Environmental Covenant, in a form substantially similar to Appendix D to the CD, to be filed with the Black Hawk County, Iowa, Recorder of Deeds. The Settling Defendant shall record and certify the recording as set forth in Section IX of the CD.

**Task 2: Remedial Design/Remedial Action Work Plan**

The Settling Defendant shall prepare the Remedial Design/Remedial Action (RD/RA) Work Plan to implement the remedy at the Site as described in the ROD, the ESD, and this SOW.

Plans and specifications, as required by this SOW, shall be submitted in accordance with the schedule set forth in Section VI, Schedule of Major Deliverables. All plans and specifications shall be developed in accordance with the EPA Superfund Remedial Design and Remedial Action Guidance (OSWER Directive No-9355.0-4A) and shall demonstrate that the Remedial Action meets all objectives of the ROD, the CD, and this SOW. The Settling Defendant shall communicate with the EPA as necessary to discuss design issues.

The RD/RA Work Plan submittal shall include, at a minimum, the following:

1. Overall Management Strategy. A statement of the overall management strategy for performing the design, construction, operation, maintenance, and monitoring of the remedy for the Site shall be part of the Remedial Design to be included in the RD/RA Work Plan. The Remedial Design objectives, assumptions, limitations, and approaches shall also be defined. As part of the RD/RA Work Plan, the Settling Defendant shall describe the other institutional controls associated with the Institutional Controls component of the remedy that, when combined with the Environmental Covenant described in Task 1 above, shall provide for an effective layering of institutional controls at the Site. The RD/RA Work Plan shall include a description of the responsibility and authority of all organizations and key personnel directing the Remedial Design and implementing the Remedial Action, including contractor personnel.
2. Groundwater Monitoring Plan (GMP). As part of the Remedial Design to be included in the RD/RA Work Plan, the Settling Defendant shall design a groundwater monitoring program for the Site to measure whether groundwater contaminants have migrated beyond the boundary of the TI Zone and to evaluate remedial progress over time. The Settling Defendant shall construct, operate, and

maintain the groundwater monitoring program during the subsequent Remedial Action and O&M phases. The GMP shall provide for monitoring of groundwater COPCs and natural attenuation parameters to track the movement of groundwater contaminants and to monitor changes in chemical constituents and chemical concentrations in the groundwater over time. The GMP shall include a description of the expected long-term monitoring requirements and how the GMP for the Site shall be implemented for the duration of the Remedial Action (i.e., until the O&M phase begins). Information contained in the GMP shall include details regarding the monitoring well network, parameters to be analyzed for in the groundwater, frequency of sampling and monitoring events, tasks to be performed, a schedule for implementation, analytical methods, and reporting requirements. At a minimum, groundwater shall be monitored for the COPCs listed in Attachment 1 of this SOW and the natural attenuation parameters listed in Attachment 3 of this SOW. The analytical results of each groundwater sampling event shall be provided to the EPA and the Iowa Department of Natural Resources (IDNR) within 45 days of each sampling event. Included shall be the raw analytical data (electronic format acceptable), the data validation package (electronic format acceptable), and a synopsis of the validated data, including summary tables. Copies of the raw analytical data and the data validation packages are not required to be submitted to the IDNR. The GMP shall include the following elements:

- a. Description of the monitoring well network and construction activities, if any, associated with the monitoring well network, including the number of new monitoring wells, if any, to be installed during the Remedial Action phase.
- b. Description of maintenance activities, if any, associated with the monitoring well network, including provisions to repair or replace monitoring wells that are destroyed or in any way become unusable.
- c. Description of groundwater sampling and monitoring activities, including the rationale for the selection of the groundwater sampling parameters and groundwater monitoring locations.
- d. Requirements and procedure for verifying the attainment of Performance Standards in Attachment 1 of this SOW.
- e. A requirement that Settling Defendant shall notify EPA and IDNR, within seven days and in writing, if groundwater monitoring results indicate the presence of site-related groundwater contaminants in groundwater outside the TI Zone in concentrations exceeding Performance Standards in Attachment 1 of this SOW. In the case of such an event, Settling Defendant shall take all steps necessary to comply with the RAOs,

performance goals, and Performance Standards for groundwater as set forth in Section III of this SOW.

f. Requirements and procedures for modifying groundwater sampling and monitoring activities.

3. Quality Assurance Project Plan. The Settling Defendant shall develop a Site-specific Quality Assurance Project Plan (QAPP) for implementation at the Site, which shall address sample analysis and data handling for samples collected in all phases of the Work, based upon the CD and guidance identified by the EPA. The QAPP(s) shall be consistent with the requirements of standard EPA methodology for laboratories. The QAPP(s) shall at a minimum include the following elements:

- a. Project Description
  - Project Scope
  - Sample Network Design
  - Parameters to be Tested and Frequency
  - Project Schedule
- b. Project Organization and Responsibility
- c. Quality Assurance Objective for Measurement Data
  - Level of Quality Control Effort
  - Accuracy, Precision and Sensitivity of Analysis
  - Completeness, Representativeness
  - Comparability
- d. Sampling Procedures
- e. Sample Custody
  - Field-Specific Custody Procedures
  - Laboratory Chain-of-Custody Procedures
- f. Calibration Procedures and Frequency
  - Field Instruments/Equipment
  - Laboratory Instruments
- g. Analytical Procedures
  - Analytical Methods
  - Field Screening and Analytical Protocol
  - Laboratory Procedures
- h. Internal Quality Control Checks



- Field Measurements
  - Laboratory Analysis
- i. Data Reduction, Validation and Reporting
- Data Reduction
  - Data Validation
  - Data Reporting
- j. Performance and System Audits
- Internal Audits of Field Activity
  - Internal Laboratory Audit
  - External Field Audit
  - External Laboratory Audit
- k. Preventive Maintenance
- Routine Preventative Maintenance Procedures and Schedules
  - Field Instruments/Equipment
  - Laboratory Instruments
- l. Specific Routine Procedures to Assess Data Precision, Accuracy, and Completeness
- Field Measurement Data
  - Laboratory Data
- m. Corrective Action
- Sample Collection/Field Measurement
  - Laboratory Analysis

4. Health and Safety Plan. The Settling Defendant shall develop a Health and Safety Plan (H&SP) for the Site designed to protect on-Site personnel and area residents from physical, chemical and all other hazards posed by implementation and maintenance of this Remedial Design/Remedial Action. The safety plans shall develop the performance levels and criteria necessary to address the following areas.

Personnel  
 Levels of protection  
 Safe work practices and safety guards  
 Medical surveillance  
 Personal and environmental air monitoring  
 Personal protective equipment  
 Personal hygiene  
 Decontamination - personal and equipment

Site work zones  
Contaminant control  
Contingency and emergency planning  
Logs, reports, and record keeping

The HASP shall follow U.S. EPA guidance and all OSHA requirements as outlined in 29 C.F.R. Sections 1910 and 1926, as well as the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"), 40 C.F.R. Section 300.150.

As part of the HASP, the Settling Defendant shall include a Contingency Plan describing procedures to be used in the event of an accident or emergency. The Contingency Plan shall include, at a minimum, the following elements.

- a. Name of the person or entity responsible for responding in the event of an emergency incident.
  - b. Plan and date(s) for meeting(s), if necessary, with the local community, including local, State and Federal agencies involved in the cleanup, as well as local emergency squads and hospitals.
  - c. First aid medical information.
  - d. Air Monitoring Plan (if applicable).
  - e. Spill Prevention, Control, and Countermeasures ("SPCC") Plan (if applicable), as specified in 40 C.F.R. Part 109, describing measures to prevent and contingency plans for potential spills and discharges from materials handling and transportation associated with implementation of the remedial action.
5. Overall Project Schedule. Project schedule for the implementation of the remedy for the Site which identifies timing for initiation and completion of all critical path tasks, including major milestones.

### **Task 3: Remedial Action**

The Settling Defendant shall implement the remedy for the Site as detailed and in accordance with the schedule provided in the approved RD/RA Work Plan. The Remedial Action for the Site shall include implementation of institutional controls, implementation of any construction activities identified in the RD/RA Work Plan, and implementation of the groundwater monitoring activities described in the GMP. The Remedial Action phase shall continue until it has been demonstrated that the Performance Standards for the Site have been achieved, and the Final Remedial Action Report has been approved by EPA.

During the Remedial Action phase, the Settling Defendant shall conduct the activities and implement the Remedial Design as set forth below.

1. Construction Activities.

During the Remedial Action phase, the Settling Defendant shall implement construction activities at the Site as identified in the RD/RA Work Plan and GMP. Upon completion of construction activities, Settling Defendant shall notify EPA and an Inspection of Construction Activities shall be conducted by the EPA, the IDNR (if the state desires to attend), and the Settling Defendant for purposes of reviewing and observing the monitoring well network. In the event that Settling Defendant proposes that no construction activities are necessary, an RD site visit shall be conducted by the EPA, the IDNR (if the state desires to attend), and the Settling Defendant for purposes of reviewing and observing the monitoring well network.

2. Groundwater Monitoring Activities

During the Remedial Action phase, the Settling Defendant shall implement the remedial action groundwater monitoring activities described in the RD/RA Work Plan and the GMP for a minimum of 1 year according to the EPA-approved remedial action schedule and continue thereafter until it has been demonstrated that the Performance Standards set forth in Section III of this SOW have been achieved, and the Final Remedial Action Report has been approved by EPA. Groundwater monitoring activities shall be conducted on a quarterly basis for a minimum of one (1) year.

**Task 4: Final Remedial Action Report**

Within sixty (60) days after Settling Defendant concludes that the Remedial Action has been fully performed and that the Performance Standards for the Site have been achieved, the Settling Defendant shall submit a Final Remedial Action Report for EPA review and approval.

The Final Remedial Action Report shall be prepared consistent with the EPA guidance entitled Close Out Procedures for National Priority List Sites, OSWER 9320.2-09A-P, January 2000 or as superseded by subsequent guidance. In the report, the Settling Defendant's Project Coordinator shall state that the Remedial Action phase has been completed in full satisfaction of the requirements of this CD and this SOW. The written report shall contain the following statement, signed by a responsible corporate official of the Settling Defendant or the Settling Defendant's Project Coordinator:

"To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the

possibility of fine and imprisonment for knowing violations."

#### **Task 5: Operation and Maintenance (O&M) Plan**

The Settling Defendant shall prepare an Operation and Maintenance (O&M) Plan that describes the activities that shall be conducted at the Site during the O&M phase.

Settling Defendant shall submit the O&M Plan with the Final Remedial Action Report. The O&M Plan shall be designed and implemented to demonstrate that the Remedial Action at the Site remains protective of human health and the environment and to confirm that the Performance Standards are maintained over the long-term (i.e., until the Work is complete). The O&M Plan shall include the schedule and requirements for the implementation of any pertinent activities described in the RD/RA Work Plan and the GMP.

The O&M Plan shall require the continued implementation of institutional controls and the continued implementation of the groundwater monitoring program. The O&M activities for the Site shall include groundwater monitoring and sampling, and documenting that institutional controls remain effective until it has been determined that concentrations of site-related COPCs in groundwater are below the levels set forth in Attachment 1 of this SOW both outside and throughout the TI Zone and EPA has approved the Completion of Work Report.

If, at any point during O&M, groundwater monitoring outside the TI Zone indicates the presence of any COPC in Attachment 1 above the concentration set forth therein, Settling Defendant shall so notify EPA in writing within seven days. Settling Defendant shall also, in the case of such an event, take all additional steps necessary to reduce concentrations of contaminants outside the TI Zone to below Performance Standards. Settling Defendant shall also notify EPA, within 60 days of reported exceedance, of the additional steps it intends to take to achieve Performance Standards, and shall provide a schedule for such actions. If EPA determines that, in addition to those actions identified by Settling Defendant, more actions are required to reduce concentrations of contaminants outside the TI Zone to achieve Performance Standards, EPA shall specify such additional actions to Settling Defendant, and Settling Defendant shall be required to implement them.

#### **Task 6: Completion of the Work**

Within 60 days after Settling Defendant concludes that all phases of the Work (including O & M), have been fully performed, Settling Defendant shall schedule and conduct a pre-certification inspection to be attended by Settling Defendant, EPA and the State.

Completion of Work for the Site shall occur when it has been demonstrated, and EPA has certified, that concentrations of site-related groundwater contaminants in areas outside the TI Zone and throughout the TI Zone are below the chemical-specific Performance Standards listed in Attachment 1 of this SOW.

If, after the pre-certification inspection, the Settling Defendant still believes that the Work has been fully performed, Settling Defendant shall submit a written report by a registered professional engineer stating that the Work has been completed in full satisfaction of the requirements of this Consent Decree. The report shall contain the following statement, signed by a responsible corporate official of a Settling Defendant or the Settling Defendant's Project Coordinator:

"To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

If, after review of the Completion of Work Report, EPA, after reasonable opportunity to review and comment by the State, determines that any portion of the Work has not been completed in accordance with this Statement of Work and the Consent Decree, Settling Defendant will be notified in writing of the activities that must be undertaken by Settling Defendant pursuant to this Statement of Work and the Consent Decree to complete the Work. The EPA will set forth in the notice a schedule for performance of such activities consistent with the Consent Decree and the SOW or require the Settling Defendant submit a schedule to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions) of the Consent Decree. Settling Defendant shall perform all activities described in the notice in accordance with the specifications and schedules established therein. If EPA concludes, based on the initial or any subsequent request for Certification of Completion by Settling Defendant, and after a reasonable opportunity for review and comment by the State, that the Work has been performed in accordance with this Statement of Work or the Consent Decree, EPA will so notify the Settling Defendant in writing.

#### **Task 7: Progress Reports**

The Settling Defendant shall submit periodic Progress Reports to the EPA and the IDNR throughout implementation and operation of the remedy selected for the Site. Progress Reports shall be submitted to the EPA and the IDNR and include a summary of the tasks performed and the results of the previous reporting period with respect to: 1) groundwater monitoring events, and 2) documentation of institutional controls. The Progress Report shall include an evaluation regarding the protectiveness of the remedy for the Site pursuant to the GMP and O&M Plan. The progress Report shall include an evaluation as to whether the remedy continues to be protective based on the results of the previous year's monitoring data and trends observed with respect to data from prior years. The Progress Report shall summarize the tasks performed during the previous reporting period and the results of the previous period's sampling and monitoring events, including tables and figures.

The initial Progress Report shall be due 90 days following the Effective Date of the Consent Decree. Subsequent Progress Reports shall be due on the 15<sup>th</sup> day immediately following the end of the reporting period. The reporting period shall be quarterly, however the reporting period may be modified upon approval by EPA. Progress Reports shall include, but need not be limited to the following:

1. Description of activities performed during the reporting period, including delays (if any) and efforts to mitigate delays (if required);
2. Summary of sampling results and tests obtained during the reporting period;
3. Summary of deliverables submitted to EPA during the reporting period;
4. Description of activities performed in support of the Community Relations Plan;
5. Description of anticipated work to be performed during the next reporting period; and
6. Modifications to work plans or schedules

#### **V. SCHEDULE OF MAJOR DELIVERABLES**

A summary of the project schedule and reporting requirements contained in this SOW is presented as follows:

<u>Submission or Activity</u>	<u>Due Date</u>
Environmental Covenant	45 days after entry of CD
Remedial Design/Remedial Action Work Plan	60 days after receipt of EPA's written authorization to proceed or 60 days after entry of CD, whichever occurs later
Initiation of Remedial Action phase	30 days after receipt of EPA's written approval of the RD/RA Work Plan
Inspection of Construction Activities	Within 30 days of Settling Defendant's notification to EPA that construction activities are complete

Groundwater Monitoring Results	45 days after sampling event
Notify EPA of exceedance of chemical-specific Performance Standards for COPCs listed in Attachment 1 for groundwater in areas outside TI Zone	Within 7 days of Settling Defendant's receipt of analytical data identifying exceedance(s)
First Progress Report	90 days after Effective Date of Consent Decree
Subsequent Progress Reports	15 <sup>th</sup> day of the month immediately following the end of a reporting period.
Plan to Replace or Repair Damaged Monitoring Well	30 days after discovery of damage or destruction
Replacement or Repair of Damaged Monitoring Well	30 days after receipt of EPA's written approval of plans to repair or replace well
Final Remedial Action Report	60 days after Performance Standards for the Site are achieved
O&M Plan	Submitted with Final Remedial Action Report
Initiation of O&M phase	30 days after receipt of EPA's approval of the Final Remedial Action Report or 30 days after EPA approval of O&M Plan, whichever occurs later
Pre-certification Inspection	60 days after completion of all Work
Completion of Work Report	60 days following Pre-certification Inspection

## **VI. REFERENCE DOCUMENTS**

The National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300.

"Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA," US EPA, Office of Emergency and Remedial Response, OSWER Directive No. 9355.3-01, EPA/540/G-89/004, October 1988.

"EPA Superfund Remedial Design and Remedial Action Guidance," Interim Final, US EPA, Office of Solid Waste and Emergency Response, OSWER Directive 9355.0-4A, June 1986.

"Guidance for the Data Quality Objectives Process, EPA QA/G-4," US EPA, Office of Environmental Information, EPA/600/R-96/055, August 2000.

"Guidance for Quality Assurance Project Plans, EPA QA/G-5," US EPA, Office of Research and Development, EPA/240/R-02/009, December 2002.

"EPA Requirements for Quality Assurance Project Plans, EPA QA/R-5," Interim Final, US EPA, Quality Assurance Division, November 1999.

"A Compendium of Superfund Field Operations Methods," Two Volumes, US EPA, Office of Emergency and Remedial Response, OSWER Directive No. 9355.0-14, EPA/540/P-87/001, August 1987.

"Test Methods for Evaluating Solid Wastes," US EPA, Office of Solid Waste and Emergency Response, SW-846, Third Edition, Volumes IA, IB, IC and II, November 1986 (including Final Update I, July 1992; Final Update II, September 1994).

National Primary Drinking Water Regulations, Final Rule, Part II, 40 CFR Parts 141, 142, 143.

"User's Guide to the Contract Laboratory Program," US EPA, Office of Emergency and Remedial Response, EPA/540/P-91/002, 1991.

"Sampler's Guide to the Contract Laboratory Program," US EPA, Office of Emergency and Remedial Response, EPA/540/P-90/006, 1991.

"CERCLA Compliance with Other Laws Manual," Draft Guidance, US EPA, Office of Emergency and Remedial Response, OSWER Directive No. 9234.1-01, EPA/540/G-89/006, August 1988.

"CERCLA Compliance with Other Laws Manual, Part II," Interim Final, US EPA, Office of Emergency and Remedial Response, OSWER Directive No. 9234.1-02, EPA/540/G-89/009, August 1989.



"Overview of the Off-Site Rule for OSCs and RPMs," US EPA, Office of Solid Waste and Emergency Response, EPA Publication No. 9834.11FS, September 1993.

"Health and Safety Roles and Responsibilities at Remedial Sites," US EPA, Office of Solid Waste and Emergency Response, EPA Publication No. 9285.1-02, July 1991.

OSHA Regulations in 29 C.F.R. Sections 1910.120 (Federal Register 45654, December 19, 1986).

"Contract Laboratory Program (CLP) Users Guide," EPA, 1988.

## ATTACHMENT 1

(Table 1-2 from the Technical Impracticability Evaluation Report)

TABLE 1-2

**PRELIMINARY REMEDIATION GOALS FOR GROUNDWATER**  
**MIDAMERICAN ENERGY COMPANY**  
**FORMER MANUFACTURED GAS PLANT - WATERLOO, IOWA**

Contaminant of Potential Concern	Chemical-Specific ARARs		Health-Based To Be Considered (TBC)		Practical Quantitation Limit <sup>b</sup>	Selected Groundwater PRG (basis for selection)
	Maximum Contaminant Level (MCL)	Risk-Based Concentration <sup>a</sup> (RBC)	Values			
Antimony	6	-	-	-	-	6 (MCL)
Arsenic	10	-	-	-	-	10 (MCL)
Cadmium	5	-	-	-	-	5 (MCL)
Chromium	100	-	-	-	-	100 (MCL)
Iron	-	10,893	10,893	-	-	10,893 (RBC)
Lead	15	-	-	-	-	15 (MCL)
Manganese	-	775	775	-	-	775 (RBC)
Nickel	-	730	730	-	-	730 (RBC)
Cyanide	200	-	-	-	-	200 (MCL)
Benzene	5	-	-	-	-	5 (MCL)
Ethylbenzene	700	-	-	-	-	700 (MCL)
2-methylnaphthalene	-	61.2	61.2	-	-	61.2 (RBC)
Benzo(a)anthracene	-	0.00852	0.00852	0.13	-	0.13 (PQL)
Benzo(a)pyrene	0.2	-	-	-	-	0.2 (MCL)
Benzo(b)fluoranthene	-	0.00506	0.00506	0.1	-	0.1 (PQL)
Benzo(k)fluoranthene	-	0.04715	0.04715	0.14	-	0.14 (PQL)
Chrysene	-	0.85244	0.85244	-	-	0.852 (RBC)
Dibenzo(a,h)anthracene	-	0.00034	0.00034	0.033	-	0.033 (PQL)

TABLE 1-2 (CONTINUED)

PRELIMINARY REMEDIATION GOALS FOR GROUNDWATER  
MIDAMERICAN ENERGY COMPANY  
FORMER MANUFACTURED GAS PLANT - WATERLOO, IOWA

Contaminant of Potential Concern	Chemical-Specific ARARs		Health-Based To Be Considered (TBC) Values		Practical Quantitation Limit <sup>b</sup>	Selected Groundwater PRG (basis for selection)
	Maximum	Contaminant Level (MCL)	Risk-Based Concentration <sup>a</sup> (RBC)			
Indeno(1,2,3-cd)pyrene	-	-	0.00505	0.1	0.1 (PQL)	
Naphthalene	-	-	6.2	-	6.2 (RBC)	

**Notes:**

All values are presented in micrograms per liter (µg/L).

ARAR = Applicable or relevant and appropriate requirements.

MCL = Maximum contaminant level.

PRG = Preliminary remedial goal.

PQL = Practical quantitation limit.

RBC = Risk-based concentration.

TBC = To be considered.

<sup>a</sup> RBC based on 1E-06 cancer risk and non-cancer hazard quotient of 1 for each target organ.

<sup>b</sup> Based on United States Environmental Protection Agency (USEPA) Method 8310. The estimated excess lifetime cancer risk at the PQL for compounds where the PQL is selected as the PRG, are as follows:

Benzo(a)anthracene	1.53E-05
Benzo(b)fluoranthene	1.98E-05
Benzo(k)fluoranthene	2.97E-06
Dibenzo(ah)anthracene	9.78E-05
Indeno(1,2,3-cd)pyrene	1.98E-05

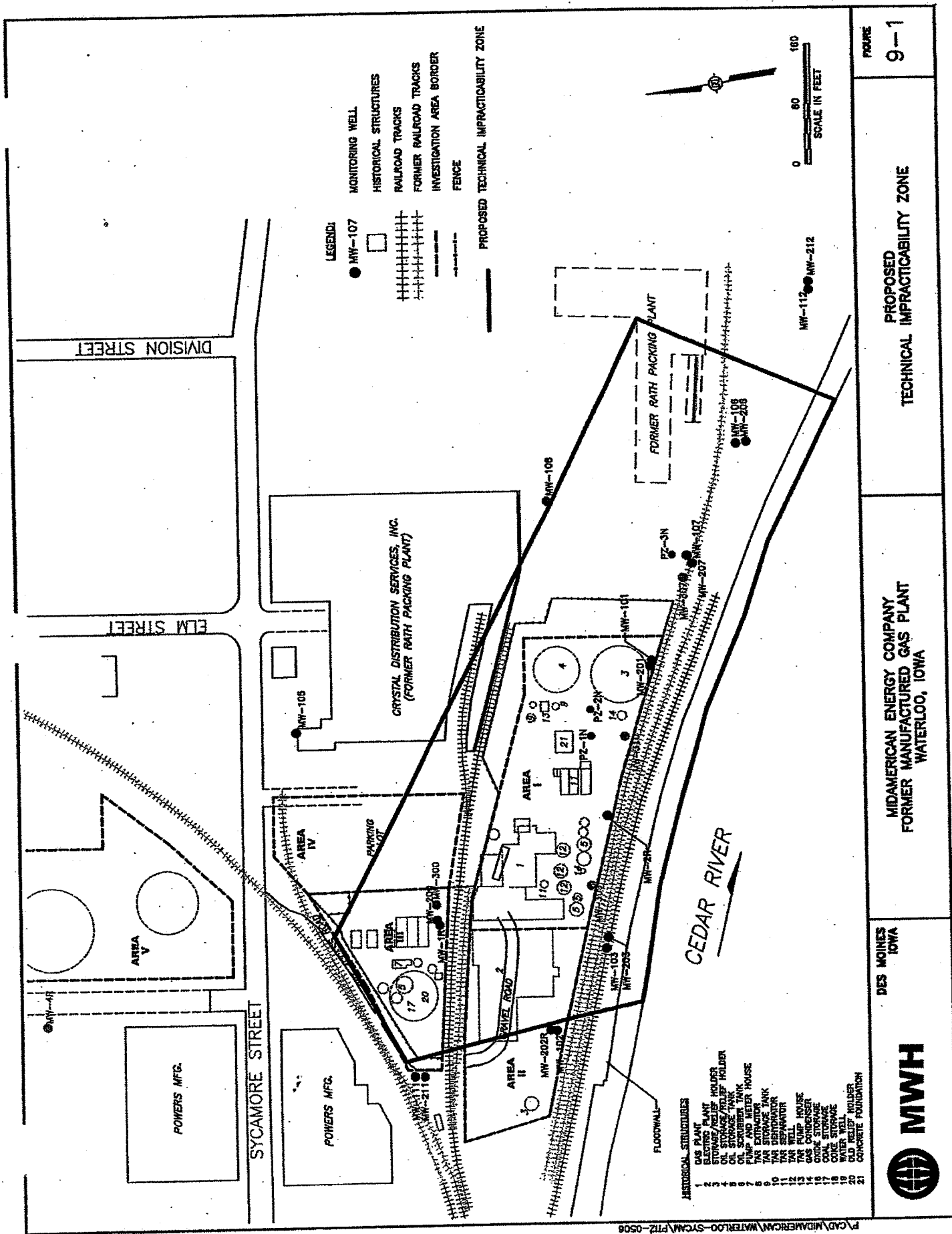
1. The groundwater PRG for each contaminant was selected as the first value in the hierarchy of chemical-specific ARARs and TBC values presented in this table (i.e., the MCL, or an RBC if an MCL does not exist). When the chemical-specific ARARs/TBC value is below the PQL, the PQL is used as the PRG.

2. Table includes contaminants of potential concern identified in the Baseline Risk Assessment (BRA) Report (USEPA, 2002a). Barium was identified as a contaminant of potential concern (COPC) for groundwater, but its exposure point concentration did not exceed its MCL; therefore, barium is not included in this table. Phenanthrene was initially retained as a COPC for groundwater in the BRA Report (USEPA, 2002a), but because no toxicity information is available, the compound was not carried forward in the risk assessment.

3. USEPA, EPA 822-R-04-005. 2004 Edition of the *Drinking Water Standards and Health Advisories*. Office of Water. Winter 2004.

## ATTACHMENT 2

(Figure 9-1 from the Technical Impracticability Evaluation Report)



## ATTACHMENT 3

(Natural Attenuation Parameters)

### MONITORED NATURAL ATTENUATION (MNA) PARAMETERS

- Alkalinity
- Ammonia-N
- Chloride
- Iron, Dissolved (field filtered)
- Methane
- Nitrate-N
- Nitrite-N
- Orthophosphate
- Sulfate
- Sulfide
- Total Kjeldahl Nitrogen (TKN)
- Total Organic Carbon
- Dissolved Oxygen
- Oxidation-Reduction Potential



## APPENDIX B

### ENVIRONMENTAL COVENANT

This Environmental Covenant is established and executed pursuant to Iowa Code Chapter 455I by MidAmerican Energy Company, an Iowa Corporation, whose mailing address is 666 Grand Avenue, Des Moines, Iowa 50309.

The signatories hereto have entered into this Environmental Covenant for the purpose of subjecting the property described below to certain activity and use limitations in accordance with the terms and conditions specified below and the provisions of Iowa Code Chapter 455I.

1. **The Property.** MidAmerican Energy Company is the fee simple title owner of that real property legally described in Exhibit A hereto, and located at Sycamore Street in Waterloo, Black Hawk County, Iowa (the "Property").
2. **Purpose.** Because contamination will remain at the Property at levels above those appropriate for unlimited use and unrestricted exposure, this Environmental Covenant is being imposed on the Property for the purposes of protecting public health and the environment, and to prevent interference with the performance, and the operation and maintenance, of any environmental response project required under the terms of the below-referenced Remedial Action/Remedial Design Consent Decree ("Consent Decree"). The signatories acknowledge that failure of implementing these activity and use limitations to serve their intended purpose could require the performance of additional work by MidAmerican Energy Company at the Property, in accordance with the Consent Decree, to ensure the protectiveness of the environmental response project.
3. **Background.** MidAmerican Energy Company conducted a Remedial Investigation ("RI") and a Feasibility Study ("FS"), which was approved by the United States Environmental Protection Agency ("EPA") on May 18, 2004, to address contamination related to former manufactured gas plant operations at the Property. On September 24, 2004, the EPA issued a Record of Decision ("ROD") which selected an environmental response project to address contamination in the soil and groundwater at the Property. The ROD included institutional controls as part of this environmental response project. MidAmerican Energy Company has

entered into a Consent Decree Civil Action No. \_\_\_\_\_, with the United States of America which is on file at the offices of the EPA, which provides for the imposition of the activity and use limitations required hereby. The EPA issued an Explanation of Significant Differences ("ESD") on August 11, 2006, that modified the remedy selected in the ROD. The ROD (as modified by the ESD and any subsequent amendments or modifications thereto) constitute the final decision document for the environmental response project required by the Consent Decree to be implemented at the Property. The ROD and the administrative record for the ROD may be reviewed at the offices of the EPA at the address specified in Section 17 below.

4. **Definitions.** Identity of Grantor, Grantee/Holder, and Agency, as each is defined in this Environmental Covenant and as provided in Iowa's Uniform Environmental Covenants Act (Iowa Code Chapter 455I):

Grantor: MidAmerican Energy Company is the current owner of this Property and the Grantor of this Environmental Covenant.

Grantee/Holder: MidAmerican Energy Company is the Grantee/Holder of this Environmental Covenant.

Agency: The Iowa Department of Natural Resources (IDNR) and the U.S. Environmental Protection Agency (EPA) are each an Agency under this Environmental Covenant.

5. **Representative and Warranties.** MidAmerican Energy Company warrants to IDNR and EPA the following:

- A. that it is the sole fee simple title owner of the Property;
- B. that it holds sufficient fee simple title to the Property to grant the rights and interests described in this Environmental Covenant free of any conflicting legal and equitable claims; and
- C. that it has identified all other persons holding legal or equitable interests to the Property, including, but not limited to, contract buyers, mortgagees, other consensual lien holders, and lessees and secured their consent to this Environmental Covenant either by obtaining their signatures hereto or by a separate subordination agreement attached hereto as Exhibit B.

6. **Running with the Property.** This Environmental Covenant is perpetual and runs with the Property as provided in Iowa Code Chapter 455I until modified or terminated as provided below in Section 11. This Environmental Covenant is binding on MidAmerican Energy Company and all of its successors, assigns, and all transferees acquiring or owning any right, title, lien or interest in the Property and their heirs, successors, assigns, grantees, executors, administrators, and devisees. The term "transferee," as used in this Environmental Covenant, shall mean any future owner of any interest in the Property or any portion thereof, including, but not limited to, owners of an interest in fee simple, contract buyers, mortgages, easement holders, and/or lessees.
7. **Activity and Use Limitations and Terms.** The Property is subject to the following activity and use limitations:
- A. Other than as provided in paragraph nine (9) below, no wells for any purpose may be placed on the Property.
  - B. The Property shall not be used for purposes described in the definition of a "residential land-use area." "Residential land-use area" is defined in Iowa Administrative Code Section 567-137.2 (455H)
  - C. Any structures constructed on the Property shall be engineered to address vapor intrusion from volatile organic compounds unless sufficient testing shall be performed prior to construction to satisfy the EPA and IDNR that vapor intrusion will not present a health risk to building occupants.
  - D. In the event of (i) a significant change in land use that could result in increased potential exposures to humans or the environment to contaminants of concern, or (ii) transfer of the Property, the Property owner shall notify IDNR and EPA of the change in land use or transfer of Property within thirty days of such event.
8. **Notice of Non-Compliance.** MidAmerican Energy Company and any subsequent transferee of the Property shall notify IDNR and EPA as soon as possible of any conditions that would constitute a breach of the activity and use limitations specified above in Section 7.
9. **Access to the Property.** Reasonable access to the Property is hereby granted to IDNR and EPA, and their authorized representatives. Access shall be granted to any private party or its contractors which may be required by law or authorized by the Agency to conduct environmental activities at the Property to ascertain or ensure the effectiveness of the environmental response project. To determine Property conditions and

compliance with the terms of this Environmental Covenant, access may include soil, air, and groundwater sampling and monitoring, additional drilling and construction of soil boring and/or groundwater monitoring wells, and other activities authorized or otherwise directed by the Agency.

10. **Groundwater Hazard Statement.** Iowa Code section 558.69 requires submission of a groundwater hazard statement and notice if "hazardous waste," as defined in Iowa Code sub-sections 455B.411(3), 455B.412(2) or section 455B.464, is present on real property. If hazardous waste is present, the groundwater hazard statement must state that the condition is being managed in accordance with IDNR rules. MidAmerican Energy Company and all subsequent transferees required to submit a groundwater hazard statement under Iowa Code section 558.69 for the Property shall make reference to this Environmental Covenant in any instrument conveying an interest in the Property. Such reference shall be in substantially the following form:

THE INTEREST CONVEYED IS SUBJECT TO AN ENVIRONMENTAL COVENANT, DATED \_\_\_\_\_, 200\_, RECORDED IN THE BLACK HAWK COUNTY RECORDED/REGISTRAR OFFICE ON \_\_\_\_\_, 200\_, AS [DOCUMENT \_\_\_\_\_, BOOK \_\_\_\_\_, PAGE \_\_\_\_\_, OR BY PARCEL NUMBER \_\_\_\_\_]. THE ENVIRONMENTAL COVENANT CONTAINS THE FOLLOWING ACTIVITY AND USE LIMITATIONS: (1) [state same limitations as in paragraph 7 above.

11. **Modification and Termination.** This Environmental Covenant may be modified or terminated in accordance with and subject to the provisions of Iowa Code Chapter 455I. The termination or modification of this Environmental Covenant is not effective until the document evidencing consent of all necessary persons is properly recorded.
12. **Enforcement.** The terms of this Environmental Covenant may be enforced in a civil action for injunctive or other equitable relief by the signatories and those persons authorized by and in accordance with Iowa Code Chapter 455I.
13. **Severability.** If any provision of this Environmental Covenant is found to be unenforceable in any respect, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired.
14. **Governing Law.** This Environmental Covenant shall be governed by and interpreted in accordance with the laws of the State of Iowa.
15. **Recordation.** Within thirty (30) days following execution of this Environmental Covenant by all parties hereto, Grantor shall properly

record this Environmental Covenant with the Black Hawk County, Iowa, Recorder/Registrar Office.

16. **Effective Date.** The effective date of this Environmental Covenant shall be the date upon which the fully executed Environmental Covenant has been properly recorded with the Black Hawk County, Iowa, Recorder/Registrar Office.
17. **Notice.** Unless otherwise notified in writing by an Agency, any document or notice required by this Environmental Covenant shall be submitted to:

Director  
Iowa Department of Natural Resources  
Wallace State Office Building  
502 East 9<sup>th</sup> Street  
Des Moines, Iowa 50319

and

Director, Superfund Division  
U.S. Environmental Protection Agency  
901 North 5<sup>th</sup> Street  
Kansas City, Kansas 66101.

**AGENCY:**

IOWA DEPARTMENT OF NATURAL RESOURCES

\_\_\_\_\_, 200\_

\_\_\_\_\_  
Jeffery R. Vonk  
Director, Iowa Department of Natural Resources

State of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) ss.

On this \_\_\_\_\_ day of \_\_\_\_\_, 200\_, before me personally appeared \_\_\_\_\_, known to me to be the Director of the Iowa Department of Natural Resources or the lawful designee of the Director who executed the foregoing instrument, and acknowledge that this person executed the same as his/her/their voluntary act and deed.

\_\_\_\_\_,  
Notary Public, State of Iowa

**AGENCY:**

U.S. ENVIRONMENTAL PROTECTION AGENCY

\_\_\_\_\_, 200\_

\_\_\_\_\_  
By: Cecilia Tapia, Director  
Superfund Division

State of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) ss.

On this \_\_\_\_\_ day of \_\_\_\_\_, 200\_, before me personally appeared Cecilia Tapia, the Director of the Superfund Division of Region VII of the U.S. Environmental Protection Agency, who being duly sworn, did sign this Environmental Covenant.

\_\_\_\_\_,  
Notary Public, State of Kansas

**GRANTOR/GRANTEE/HOLDER:**

MIDAMERICAN ENERGY COMPANY

\_\_\_\_\_, 200\_ By: \_\_\_\_\_  
Title: \_\_\_\_\_

State of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) ss.

On this \_\_\_\_\_ day of \_\_\_\_\_, 200\_, before me personally appeared \_\_\_\_\_ and \_\_\_\_\_ who being duly sworn, did say that they are the corporation, that (the seal affixed to said instrument is the seal of said corporation or no seal has been procured by said corporation) and that the instrument was signed and sealed on behalf of said corporation by authority of its board of directors and that the said officers acknowledge the execution of said instrument to be the voluntary act and deed of said corporation by them voluntarily executed.

\_\_\_\_\_  
Notary Public, State of \_\_\_\_\_